

RIVERS AND FLOODS

By R. E. SPENCER

The only rises of consequence during August were a few widely scattered flash floods, which occurred between the 6th and 14th in Colorado, Arizona, and New Mexico as results of heavy local summer-time rains.

On the 6th, according to newspaper reports, a dam across Virgin River near Littlefield, Ariz., was destroyed, with a considerable loss of livestock below; and at about the same time in Fremont, Otero, and Huerfano Counties of Colorado at least five bridges were destroyed, considerable damage was done to highways and crops, and the town of Walsenburg suffered some loss in tangible property. The newspaper estimate of these latter losses is \$75,000. Reports were received, also, of damage to the extent of about \$4,000 in the vicinity of Higbee, Colo. (Purgatoire River), and of \$1,375 in the vicinity of Fort Lyon, Colo. (Arkansas River), about the 7th. A saving of \$1,000 worth of property was effected at Fort Lyon through flood warnings.

A considerable rise—the result of torrential rainfall over the tributary drainage of the Puerco River—occurred in the Rio Grande at San Marcial, N. Mex., following the 9th. The crest, 5.5 feet, was the highest of record at that station. In spite of strenuous efforts to protect the levee at San Marcial, at least three breaks occurred in it, with the result that most of the town was flooded. No lives were lost, women and children having been removed to another city before serious inundation occurred. The damage in San Marcial and vicinity was estimated at \$50,000, in addition to which the villages of San Acacia and San Antonio, N. Mex., suffered considerable losses. Press reports state that at least 30,000 acres were overflowed between Socorro and San Marcial.

[All dates in August except as otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest	
		From—	To—	State	Date
ATLANTIC DRAINAGE					
Santee:	<i>Feet</i>			<i>Feet</i>	
Rimini, S. C.	12	1	3	12.2	2, 3.
Ferguson, S. C.	12	3	5	12.3	4, 5.
EAST GULF DRAINAGE					
Etowah: Canton, Ga.	11	(1)	1	15.8	July 31.
MISSISSIPPI DRAINAGE					
Arkansas:					
Fort Lyon, Colo.	6	-----	-----	8.5	7.
Lamar, Colo.	8	-----	-----	8.8	8.
Great Bend, Kans.	5	-----	-----	5.3	10, 11.
Purgatoire: Higbee, Colo.	4.5	-----	-----	10.0	7.
Canadian: Logan, N. Mex.	4	-----	-----	6.0	8, 10.
WEST GULF DRAINAGE					
Rio Grande: San Marcial, N. Mex.	2	-----	-----	5.5	12.
PACIFIC DRAINAGE					
Colorado: Parker, Ariz.	7	(1)	(2)	11.9	June 2.

¹ Continued from last month. ² Continued at end of month.

551.615:633 (73)
EFFECT OF WEATHER ON CROPS AND FARMING
OPERATIONS, AUGUST, 1929

By J. B. KINCER

General summary.—The outstanding important feature of the weather of the month was the continued drought which prevailed over practically all interior sections, including the Northwest and many Rocky Mountain dis-

tricts; at the close of the month conditions were still serious in most areas.

During the first decade there were beneficial showers in parts of the Ohio Valley, the middle Appalachian region, and locally elsewhere, but there was a serious deficiency of precipitation over the Northeast and the Northwest, especially the latter area where hot weather prevailed, intensifying the dryness. Moisture was ample from Kentucky southward and in parts of the Southwest and the southern Rocky Mountain area, but west of the Rockies there was practically no rainfall.

During the second decade there were sufficient rains in only a few rather restricted areas east of the Rocky Mountains, mainly in parts of the Middle Atlantic States and New England, but in much of the Lake region and generally over the section between the Mississippi River and the Rockies serious drought prevailed. Parts of the Southeast still had sufficient moisture, while conditions were favorable, due to previous rains, over southern Rocky Mountain sections, but most of the Pacific Northwest continued seriously dry.

During the last decade there was no appreciable improvement in the agricultural situation, with a general rain needed throughout the Ohio Valley and widespread, serious drought continuing in most of the States between the Rockies and the Mississippi River. Most late crops deteriorated, especially on uplands, while the ground was too hard and dry to plow in most sections. Timely and generous rains were very beneficial in the Appalachian region, while moisture conditions were still rather satisfactory in the southern Rocky Mountain area.

Small grains.—During the first decade harvesting and threshing winter wheat had been mostly completed in practically all parts of the eastern Ohio Valley, and to southern Iowa and Nebraska in the West. In the spring wheat sections rapid advance of harvesting, threshing, and combining was possible, with gathering of oats largely completed. There was some scattered threshing in the Ohio Valley during the second decade, but this work had been largely completed in the winter wheat area, except in the West, where it was well along. Harvest and threshing were also favored in the spring wheat region, with generally excellent harvest weather. During the last decade the weather favored late harvesting in the spring wheat area with cutting nearly done in most parts and threshing well along. Plowing was retarded generally due to hard, dry soil, although much had been accomplished in the eastern and lower Ohio Valley and north to Kansas in the West. The weather favored rice harvest, but flax suffered from lack of rain in the Dakotas.

Corn.—During the first decade corn made good progress in the Ohio Valley, where timely rains were beneficial, but the crop was still uneven in places. In Iowa progress was poor in the south and west where it was too dry, but fair elsewhere, with the bulk of the crop in milk and roasting-ear stages. In southern Missouri and Kansas and locally in Nebraska and South Dakota rains were favorable, but in much of the Southwest it was too dry for corn and much deterioration occurred. During the second decade conditions remained substantially unchanged, with a general need of rain in the western belt and severe suffering in some places, although in Iowa and Missouri the droughty conditions were mitigated somewhat by cool weather. During the last decade there was practically no relief from the dry conditions. Corn made fair progress in the eastern Ohio Valley, but in western parts there were complaints of firing and deterioration. The bulk of the crop was maturing too rapidly in Iowa and elsewhere west of the Mississippi River

much suffering from the drought was reported, with rapid maturity; 50 to 75 per cent of the crop in Kansas was reported to have passed the stage where rain could benefit.

Cotton.—During the first decade cotton made mostly good progress in the Carolinas and Georgia, except that it was too wet in parts and too dry in other sections. Advance varied considerably in the central parts of the belt, ranging from deterioration to very good, and in some southern districts blooming was reported as practically ceased and plants shedding badly. Conditions were unfavorable in Louisiana, but in Arkansas progress was good to excellent. Advance was fairly good in Oklahoma, but rain was needed, while in Texas progress was mostly poor, except in the northwest; heat and drought caused premature opening and some shedding. During the second decade conditions continued generally favorable in the Carolinas; but it was too wet in parts of Florida and Georgia, while in Alabama and Mississippi progress ranged from deterioration to good. Growth was slow in Louisiana and fruiting much diminished; unfavorable droughty conditions continued in western Arkansas, but elsewhere in that State advance ranged from fair to excellent. Growth was rather poor in Oklahoma due to need of rain, while in Texas cotton mostly deteriorated, with heat and drought causing premature opening and

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WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

August was another unusually quiet month over the North Atlantic, and up to time of writing only 15 vessels have forwarded storm reports, while only 3 of these reported winds as high as force 9.

As shown in Table 1, there were no unusually large pressure departures at any of the land stations given. The North Atlantic HIGH was well developed during the first half of the month, as also was the Icelandic Low during the greater part of the first decade.

Fog was again very prevalent, being reported on from 5 to 10 days off the American coast, north of the Virginia Capes; on 9 to 17 days over the Grand Banks, and on from 7 to 12 days over the middle and eastern sections of the steamer lanes.

Charts VIII to XI cover the period from the 1st to 4th and Charts XII to XV from the 7th to 10th. These charts are presented to give an idea of the weather encountered by the airship *Graf Zeppelin* during the flights from Germany to the United States and return.

On the 1st and 2d an area of low pressure was over the Province of Quebec and another off the coast of Great Britain, although both were accompanied by moderate weather only. On the 3d the eastern disturbance was central near Stornoway, Scotland, and on that day moderate gales were reported by vessels in the westerly and southerly quadrants. By the 4th the western Low was central near Halifax, and the New York Weather Bureau station reported a NW. wind, force 8.

From the 5th to 18th, judging from reports received, there ensued a period of remarkably favorable weather, with an area of high pressure over a large section of the ocean during the greater part of the period, although one vessel encountered a moderate gale on the 5th, as shown in table.

On the 19th a moderate disturbance was central near 58° N., 18° W., that moved but slightly during the next three days, and westerly to southwesterly winds were

shedding. During the last decade conditions remained generally unchanged east of the Mississippi River and in Louisiana and Arkansas. Progress of cotton was good in parts of the extreme West and the Panhandle of Texas, but elsewhere rather general deterioration continued, with plants opening prematurely and shedding. Deterioration continued in Oklahoma, with further complaints of shedding, blooming nearly stopped, and bolls small and opening prematurely.

Miscellaneous crops.—Meadows, pastures, and ranges were rather seriously in need of rain at the close of the month, due to the continued drought, and especially so in the Northwest where there were reports of water holes drying and livestock being shipped out. Livestock held up well generally, however, although there were some reports of feeding dairy stock locally. Haying was favored throughout the month, with much saved.

Truck crops also needed rains generally, with moisture urgent in places to save the late potato crop. Setting some winter truck had begun in Florida at the close of the month. Tobacco cutting advanced in Kentucky, although at the end of the month cutting was being forced in the Burley area. Mostly excellent weather for sugarcane prevailed in Louisiana and sugar beets did well throughout the month. Citrus were favored generally.

reported from the 19th to 22d by vessels north of the 50th parallel and east of the 25th meridian.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, August, 1929

Stations	Average pressure	Departure	High-est	Date	Low-est	Date
	Inches	Inch (2)	Inches		Inches	
Julianehaab, Greenland.....	29.87		30.16	29th.....	29.56	19th.
Belle Isle, Newfoundland.....	29.86	± 0.03	30.08	11th 4.....	29.52	6th.
Halifax, Nova Scotia.....	30.01	± 0.04	30.18	9th 4.....	29.72	2d.
Nantucket.....	29.98	± 0.04	30.26	17th 4.....	29.46	4th.
Hatteras.....	29.99	± 0.05	30.28	21st.....	29.70	4th.
Key West.....	29.99	± 0.03	30.04	2d 4.....	29.86	28th.
New Orleans.....	30.01	± 0.01	30.12	17th 4.....	29.90	13th.4
Cape Gracias, Nicaragua.....	29.89	± 0.00	29.94	8th.....	29.84	14th.4
Turks Island.....	30.06	± 0.02	30.10	2d 4.....	30.00	24th.
Bermuda.....	30.17	± 0.03	30.30	17th.....	30.04	12th.
Horta, Azores.....	30.20	± 0.04	30.42	5th.....	29.94	18th.
Lerwick, Shetland Islands.....	29.75	± 0.05	30.12	26th.....	29.41	4th.
Valencia, Ireland.....	29.98	± 0.06	30.28	18th.....	29.54	31st.
London.....	30.00	± 0.02	30.28	19th.....	29.50	1st.

¹ Average of 28 observations.

² No normal available.

³ From normals shown on Hydrographic Office Pilot Chart, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.

⁴ And on other date or dates.

⁵ From normals based on 8 a. m. observations.

On the 19th a tropical disturbance of limited extent and intensity was central near St. Lucia in the Windward Islands. This moved slowly westward, apparently causing but little damage, and on the 22d was central some distance northwest of Grand Cayman Island. No reports of heavy weather have been received from any vessels within the limits of this disturbance.

On the 26th a fairly well-developed disturbance was central near 56° N., 25° W., and one vessel in the westerly quadrant experienced a northerly wind, force 9.

On the 31st Halifax was near the center of a low of limited extent, and on the same date a second depression was central near 48° N., 25° W., while moderate gales were reported near the centers of both.